Supplementary Digital Content 1

Clinical followup and inclusion criteria from the Zambian Exclusive Breastfeeding Study (ZEBS)(ClinicalTrials.gov Identifier: NCT00310726).

Infant samples

Initially 358 infants born from the ZEBS cohort prior to 10/31/2002 were elegible to *BST2* genotyping, as this date was selected as the final PCR results were available. All but three samples from infected children could be found and genotyped (one missing in each group). We defined as uninfected all children with a negative PCR when last seen at a minimum of 28 days if lost to follow-up or died before 24 months of age. There were 242 uninfected children and all but four could be found and genotyped. We also included in the uninfected group nine children who tested negative before death but who died less than 28 days of age. These were combined in the group considered "uninfected". Exclusion of these children did not change the results. We did not select for genotyping 19 children with a last negative PCR results <28 days who were not known to have died.

Transmission rate in the cohort selected for genotyping

The HIV transmission rates were slightly, but not significantly, higher in the genotyped cohort than in the entire ZEBS cohort who were not genotyped. Intauterine, intrapartum and postpartum transmission rates were 7.1%, 7.4% and 11.8%, respectively, in the 331 children who were genotyped and 5.6%, 6.4% and 8.6%, respectively in the 592 children who were not genotyped but who could be classified using the same definitions (p=0.26).

Supplement Table 1- Clinical and demographic variables in Zambian cohort of mother-to-child transmission of HIV-1

Variables	HIV-1 infected infants (II); n = 85			Exposed uninfected infants (EU)	*p*-value (II vs. EU) [d]
	IU [a]	IP [b]	PP [c]		
	n = 22	n = 25	n = 38	n = 246	
Maternal age [IQR]	26.0 [22.8 - 31.2]	27.0 [21.0 - 30.0]	26.9 [24.9 - 28.8]	25.0 [22.0 - 29.0]	0.26
Maternal body mass index					
<18.5 kg/m^2	5 (22.7%)	6 (24.0%)	12 (31.6%)	45 (18.9%)	0.25
≥18.5 kg/m^2	17 (77.3%)	19 (76.0%)	26 (68.4%)	193 (81.1%)	
Hemoglobin					
<10 g/dl	9 (40.9%)	10 (40.0 %)	14 (36.8%)	66 (27.2%)	0.16
≥10 g/dl	13 (59.1%)	15 (60.0 %)	24 (63.2%)	177 (72.8%)	
Maternal CD4+ cell count during delivery [IQR]	215.5 [134.3 - 327.0]	242.0 [154.5 - 305.5]	209.0 [106.0 -318.8]	373.0 [268.5 - 528.3]	**< 0.0001**
Maternal plasma viral load in delivery [IQR] **(**log_{10} copies/ml**)**	5.19 [4.66 - 5.39]	5.12 [4.52 - 5.33]	5.12 [4.64 - 5.33]	4.54 [3.92 - 5.05]	**< 0.0001**
Breast milk viral load [IQR] **(**log_{10} copies/ml**)**	2.97 [2.66 - 3.08]	3.46 [3.05 - 3.59]	3.10 [2.81 - 3.24]	1.69 [1.46 - 1.88]	**< 0.0001** [e]
Infant sex, female (%)	10 (45.4%)	9 (37.5%)	19 (50.0%)	113 (46.3%)	0.89
Infant birth weight					
< 2500 g	3 (13.7%)	4 (19.1%)	5 (13.5%)	28 (11.7%)	0.44
≥ 2500 g	19 (86.3%)	17 (80.9%)	32 (86.5%)	212 (88.3%)	

[a] Intrauterine transmission (IU) confirmed with positive HIV-1 PCR within 2 days of birth;
[b] Intrapartum transmission (IP) confirmed with positive PCR result within 42 days of birth;
[c] Postpartum transmission (PP) with positive PCR result at 42 days or older;
[d] Mann-Whitney test and Fisher exact test were performed respectively for continuous and categorical variables;
[e] Postpartum infected infants (PP) vs. Exposed uninfected infants (EU).

Supplementary Digital Content 2

Brazilian cohort of adult AIDS progression

The period to AIDS was defined as HAART initiation or CD4+ T cell count below 350 cells/mm^3 and HIV-1 infection diagnosis, thus patients were classified in categories according to time (in years) to AIDS: rapid progressors (RP), chronic (CP) and long-term nonprogressors (LTNP). RP were defined as having at least, one HIV-1 negative /undetermined test before the first HIV-1 positive serological test, as long as the interval of both measures does not exceed three years, CP started HAART or developed symptomatic comorbidities between four to nine years after seroconversion and LTNP started HAART or developed symptomatic comorbidities after ten years, according to Casado *et al*. (2010) criteria. After signed an informed consent form, the patients were interviewed about behaviour and socio-demographics characteristics using a standard questionnaire and peripheral blood was collected.

Supplementary Digital Content 2 - Clinical and demographic characteristics of a Brazilian cohort with AIDS progression follow up.

Clinical characteristics	Long-term nonprogressors	Rapid progressors (RP)	Chronic progressors (CP)	*p*-value (RP *vs* CP)
	n = 21	n = 37	n = 30	
Age (years)[IQR]	39.2 [35.4 - 43.0]	39.8 [35.8 - 43.8]	40.3 [35.5 - 43.0]	0.56
Sex, female (%)	20 (95.23)	23 (62.16)	24 (80.0)	0.18
Ethnicity (% European-descendant)	13 (61.90)	27 (72.97)	20 (66.67)	0.60
CCR5-Δ32 allelic frequency (%)	14.28	5.41	5.00	0.62
Time from HIV-1 diagnosis to AIDS[a]		1.57 [1.29 - 1.37]	9.40 [9.17 - 9.63]	
Routes of exposure to HIV-1 (%) [b]				
Heterosexual	20 (95.23)	30 (81.09)	25 (83.33)	1
Men who have sex with men	0 (0.00)	6 (16.21)	2 (6.67)	0.28
Injection drug users	0 (0.00)	1 (2.70)	2 (6.67)	0.58
Others	1 (4.76)	0 (0.00)	1 (3.33)	
Coinfections (%)				
Hepatitis C virus	0 (0.00)	3 (8.11)	7 (23.33)	0.09
Hepatitis B virus	0 (0.00)	2 (5.41)	1 (3.33)	1
Tuberculosis	1 (4.76)	2 (5.41)	2 (6.67)	1
Human T-lymphotropic virus type 1	0 (0.00)	1 (2.21)	0 (0.00)	
Toxoplasmosis	1 (4.76)	5 (13.51)	0 (0.00)	
Human papillomavirus	0 (0.00)	1 (2.21)	0 (0.00)	
Others [b]	1 (4.76)	7 (18.91)	0 (0.00)	

[a] AIDS progression criteria according to Casado *et al*. (2010): RP were classified according to measurements below 350 CD4+ cells/mm^3 within three years of seroconversion, CP included patients with four to ten years without HAART and measurements below 350 CD4+ cells/mm^3 and LTNP;

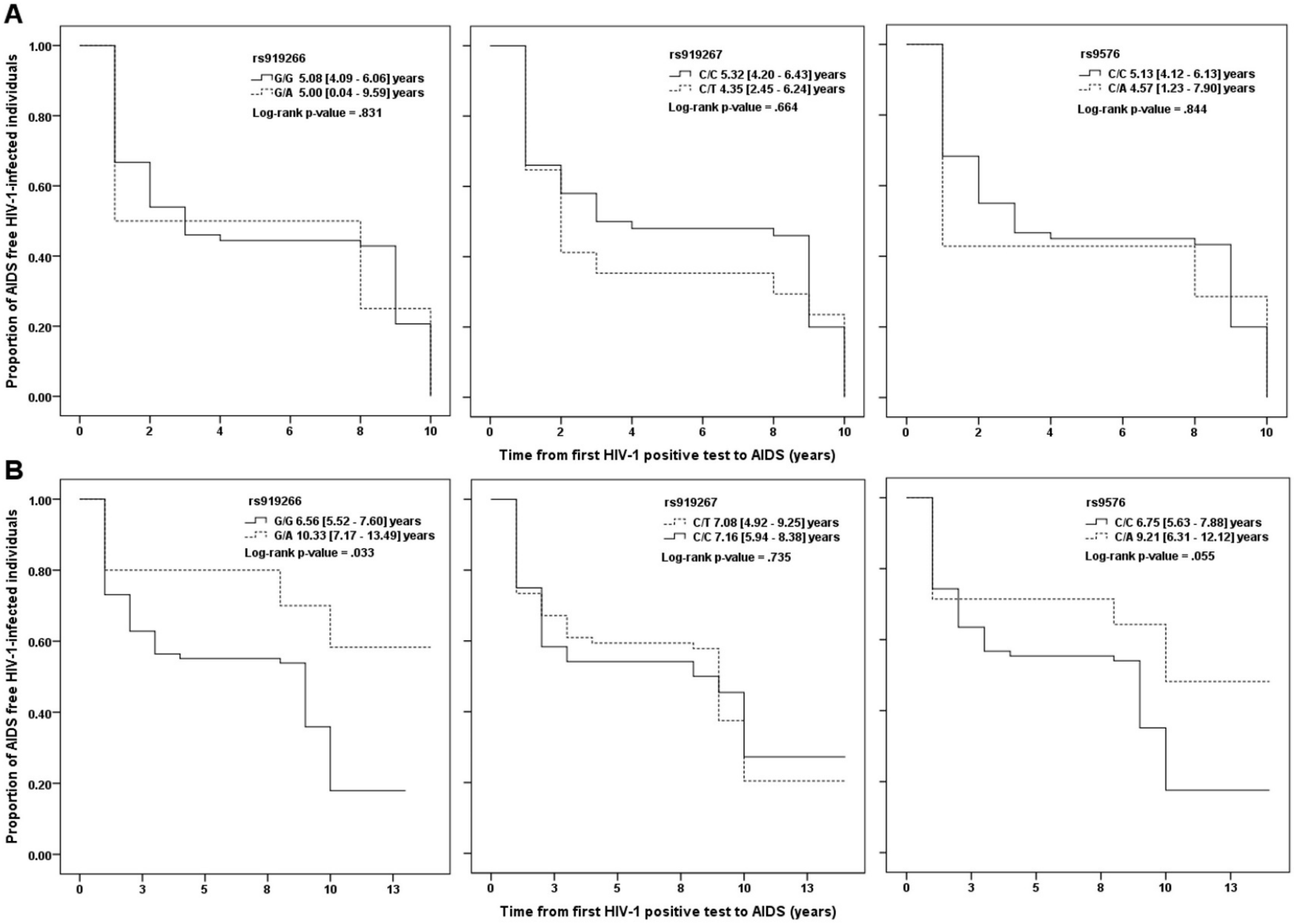
[b] "Others" category include at least one of the following coinfections: Human papillomavirus, cytomegalovirus, herpes zoster and syphilis.

Supplement Table 2 - *BST2* polymorphisms in infected mothers and exposed infants from a Zambian cohort of HIV-1 vertical transmission.

BST2 SNPs		HIV-1 exposed infants				HIV-1 infected mothers			
		Infected	Uninfected	OR [95% CI] [a]	*p*-value	Transmitters	Non-transmitters	OR [95% CI] [a]	*p*-value
MAF		n = 85 (%)	n = 246 (%)			n = 26 (%)	n = 75 (%)		
rs919266	A	7 (4.12)	26 (5.28)	0.88 [0.34 - 2.26]	0.69	4 (7.69)	6 (4.0)	3.98 [0.88 - 18.04]	0.49
rs919267	T	59 (34.71)	154 (31.30)	1.55 [0.90 - 2.70]	0.47	18 (34.62)	45 (30.0)	1.23 [0.48 - 3.12]	0.66
rs9576	A	22 (12.94)	73 (14.84)	0.80 [0.43 - 1.49]	0.63	7 (13.46)	22 (14.67)	1.11 [0.39 - 3.15]	0.99
Genotypes									
	G/G	78 (91.76)	220 (89.43)	Reference	0.68	22 (84.62)	70 (93.33)	Reference	0.35
rs919266	G/A	7 (8.24)	26 (10.57)	0.89 [0.35 - 2.25]		4 (15.38)	4 (5.33)	4.8 [0.99 - 23.16]	
	A/A	0 (0.0)	0 (0.0)	-		0 (0.0)	1 (1.34)	-	
	C/C	34 (40.00)	117 (47.56)	Reference	0.19	11 (42.31)	34 (45.33)	Reference	0.97
rs919267	C/T	43 (50.59)	104 (42.28)	1.68 [0.95 - 3.00]		12 (46.15)	37 (49.33)	1.04 [0.39 - 2.76]	
	T/T	8 (9.41)	25 (10.16)	1.10 [0.43 - 2.83]		3 (11.54)	4 (5.34)	3.41 [0.59 - 19.65]	
	C/C	65 (76.47)	176 (71.54)	Reference	0.44	19 (73.08)	55 (73.33)	Reference	0.89
rs9576	C/A	18 (21.18)	67 (27.24)	0.75 [0.40 - 1.43]		7 (26.92)	18 (24.00)	1.22 [0.43 - 3.50]	
	A/A	2 (2.35)	3 (1.22)	2.27 [0.29 - 17.66]		0 (0.0)	2 (2.67)	-	
Haplotypes									
rs919266-	G-C-C	111 (65.29)	333 (68.52)	Reference		34 (65.38)	105 (70.00)	Reference	
rs919267-	G-T-C	37 (21.76)	85 (17.49)	1.31 [0.81 - 2.06]	0.24	11 (21.15)	23 (15.33)	1.47 [0.58 - 3.54]	0.39
rs9576	G-T-A	15 (8.82)	43 (8.85)	1.05 [0.52 - 2.01]	0.87	4 (7.69)	16 (10.67)	0.77 [0.18 - 2.62]	0.78
(D'=0.97;	A-T-A	7 (4.11)	25 (5.14)	0.84 [0.30 - 2.07]	0.83	3 (5.77)	6 (4.0)	1.54 [0.23 - 7.68]	0.69
R^2=0.29)									

CI, Confidence interval; D', Coefficient of linkage disequilibrium; MAF, Minor allele frequency; OR, Odds ratio; R^2, Correlation coefficient of alleles; SNPs, Single nucleotide polymorphisms.

[a] Adjusted for maternal CD4+ cell count and HIV-1 plasma viral load.



Supplementary Digital Content 3 – Kaplan-Meier analysis was performed to evaluate the influence of three *BST2* SNPs (rs919266, rs919267 and rs9576) genotypes in a Brazilian cohort of: **A)** Chronic progressors (CP, n=37) and rapid progressors (RP, n=30); **B)** CP, RP and Long-term non progressors (LTNP=21). Time to AIDS was defined as the interval from the first HIV-1 positive result until the date of the first diagnostic of CD4+ cells decline (<350 cells /mm^3) or HAART intervention.